Original Article

The Effect Of Environmental Factors On The Events Of Restricted Ardes In Age Children Under Five Years

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ARTICLE INFO

Article History:
Submit, 16 Agt 2020
Revised, 29 Sept 2020
Accepted, 12 Oct 2020
Available online, 30 Des 2020

Keywords:
Environmental factors, recurrent ARI events, toddler

ABSTRACT

Background: Acute Respiratory Infection (ARI) is one of the health problems in developing and developed countries. The World Health Organization (WHO) states that under-five mortality is generally caused by infectious diseases, and two-thirds are caused by Acute Respiratory Tract Infection or ARI. Objective To find out the effect of environmental factors on recurrent ISPA occurrence in children under five years of age in the work area of Baolan Health Center, Tolitoli District.

The design used in this study is cross-sectional analytic. The population is all mothers who have children with a history of Ispa disease in the last 6 months without complications (asthma, pulmonary tuberculosis, pneumonia). The sample size is 75 respondents using the Simple Random Sampling technique. Independent Variables of research are Environmental Factors. Dependent variable is Repeated Ispa Event based on observation of Toddler Medical Record. Data was collected using a questionnaire, then the data were analyzed using the Logistic Regression test, with a significance level of α 5 0.05.

The results showed that p <a with a value of <0.05, this can be seen in Overall Statistics with a significance value of (p) 0.001 which means that there are variables that affect the incidence of recurrent ARI, and when viewed (p) in each independent variables namely ventilation variable has a value (p) of 0.007 occupancy density variable has a value (p) of 0.009, mosquito repellent use variable has a value (p) of 0.038, cooking fuel type variable has a value (p) of 0.073, the variable habit of smoking family members has a value (p) of 0.003.

The discussion of this study was ventilation factors, occupancy density, use of medicinal drugs, types of cooking fuel, smoking habits of family members affecting the incidence of recurrent ARI in children under five years of age in the work area of the Baolan Community Health Center, Tolitoli district.

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Introduction

Acute Respiratory Infections (ARI) is one of the health problems in developing and developed countries. *The World Health Organization* (WHO) states that under-five deaths are generally caused by infectious diseases, and two thirds are caused by Acute Respiratory Tract Infections (ARI (WHO, 2102). WHO also said the incidence of ARI in developing countries was 0.29% or 151 million, while in industrialized countries it was 0.05% or 5 million. This is directly proportional in terms of visits to health services, that as many as 78% of children under five who visit health services are ARI visits (WHO, 2012).

Acute Respiratory Tract Infection or Acute Respiratory Infection is a disease that attacks one or more of the respiratory tract starting from the nose (upper channel) to the *alveoli* (lower duct) including its *adhesions* such as sinuses, middle ear cavity and *pleura* (Ministry of Health, 2010 and RI Ministry of Health, 2001) Respiratory tract infections that occur repeatedly and in a relatively short time will cause material and non-material losses. The more often a toddler suffers from ARI the greater the loss that must be borne by the family because the greater the medical costs that must be incurred and the more time needed to treat the toddler so that it can reduce work productivity. In Indonesia, on average each baby and child will experience ISPA pain 3-6 times a year, so there is a very high tendency for children suffering from ARI (Umrotun, et al, 2002 in Rahyuni's research, 2009).

Based on the results of the Indonesian health demographic survey, the mortality of children under the age of 1-4 years (Akaba) in 2007 was 44 per 1000 live births, and 15.5% were 30,470 deaths caused by ARI. This shows that in Indonesia as many as 83 toddlers die every day due to ARI. This incident put Indonesia at number 6 with a total of 6 million cases per year (Ministry of Health, 2010). ARI is also one of the main causes of patient visits at health facilities. 40% −60% of visits to health centers were recorded and 15% −30% of visits were in outpatient care and hospital admissions were caused by ARI (Susanto, 2009 in Ellita, 2013).

In Central Sulawesi Province, the prevalence of ARI cases spread throughout the Central Sulawesi Province with a very varied prevalence range of around 18.8% - 42.7% and the prevalence of ISPA in the last month in Central Sulawesi Province was 28.4%, prevalence above 30% was found in 7 districts / cities namely buol district, parigi moutung, morowali, bamggai islands and hammer city. (Riskesdas Central Sulawesi, 2007).

A preliminary study at the Baolan Health Center UPT shows that ARI is a major problem in the community, based on patient visit data, during 2017 ARI cases were recorded as many as 2781 cases, placing ISPA at the top of the top 10 most diseases in the Baolan Health Center UPT. Of these 2781 cases, 1,232 (44.3%) cases occurred in the toddler group, and as many as 375 toddlers were recurrent ARI patients (Baolan Health Center, 2017). From the ISPA case data collected, it can be determined the prevalence of UTI ARI cases in the working area of the Baolan Health Center UPT reached 44.3% and included in the category above the average prevalence of ARI cases in Central Sulawesi, while the prevalence of recurrent ARI in infants reached 13.48 %. Based on data from the last 3 months in 2018 where in January the incidence of Ispa in children under five was 84 cases, in February the incidence of Ispa in children under five was 92 cases and in March the incidence of Ispa in children under five was 102 cases (Puskesmas Baolan, 2018).

In general there are three risk factors for ARI, namely environmental factors, individual children's factors and behavioral factors. The influence of environmental factors in causing disease in humans, it has long been recognized and even long ago pointed out, that the

role of the environment in improving health status is very large. Environmental factors here include: house ventilation. Based on regulation No. 1077 / MENKES / PER / V / 2011, each house is required to have 10% of the house area to meet the requirements of a healthy home. Home ventilation that does not meet the requirements will cause ispa in infants with a risk of 3.07 times greater than that of house ventilation that meets the requirements (Lindawaty, 2010).

In addition, residential density is also one of the factors in the occurrence of recurrent isp disease in children under five. Seen based on the percentage of toddlers specified according to the incidence of ARI and residential occupancy density shows that toddlers who live in places with poor residential density are more likely to experience ARI, which is equal to 56.83% compared with toddlers who live with a good density of housing only 52.65% experienced ISPA. The area of the building that is not comparable to the number of residents is not healthy because it can cause a lack of oxygen consumption and cause transmission of infectious diseases (Notoatmodjo, 2008).

In addition, smoking habits of family members make toddlers as passive smokers who are always exposed to cigarette smoke. The presence of a smoker or more in the household will increase the risk of family members experiencing respiratory disorders, where the occupants / family members who have the habit of smoking have an opportunity to increase the incidence of Ispa by 7.83 times compared to the homes of toddlers whose residents do not smoke (Citra, 2012)

The use of mosquito repellent is also one of the factors of air pollution which can cause recurring Ispa events where mosquito repellent consists of various types, including mosquito coils, spray, topical. Mosquito repellent that can cause the greatest risk of respiratory problems is anti-inflammatory. Based on research, the use of mosquito coils has a risk of 5.89 times for experiencing Ispa compared to respondents who did not use mosquito coils (Halim, 2012).

The cause of other environmental factors that can cause the occurrence of Ispa is the use of cooking fuel. The type of fuel that does not meet the requirements is the use of firewood because it produces more smoke compared to fuel using gas or kerosene. Ispa events are more due to air pollution by cooking fuel fumes in homes that do not meet the requirements compared to air pollution by fuel fumes to cook in eligible homes (Citra, 2012).

In its journey, acute respiratory infections are affected by a variety of risk factors. As stated by Blum in *Planing for health, development and application of social change theory,* that environmental factors play a major role in improving public health. On the contrary, poor public health conditions, including the emergence of various infectious diseases so that the contribution of environmental factors is very large (Notoatmodjo, 2008). So that in this case the UPT Health Center Baolan plays an important role because the Puskesmas is a place and facility that is close to the community and the puskesmas can provide early prevention of recurring Ispa incidence in children under five. Puskesmas is a public health service that prioritizes promotive and preventive services to community groups about the importance of maintaining environmental health by implementing clean and healthy lifestyle among the people who live in the working area of the Baolan Health Center in the District of Baolan. Tolitoli

Based on the description above, researchers are interested in conducting research with the title "The effect of environmental factors on the incidence of recurrent ARI in children under five years of age in the work area of the UPT Baolan Health Center in Tolitoli Regency".

Method

design used in the study wasanalytic *cross-sectional*. Population is All Mothers with Toddlers with a history of Ispa in the last 6 months without complications (Asthma, Pulmonary TB, Pneumonia). The sample size was 75 respondents using the Simple Random Sampling technique. Independent variable of research is Environmental Factors. The dependent variable is Recurring Ispa Events based on the observation of medical records of toddlers. Data was collected using a questionnaire, then the data were analyzed using thetest *Logistic Regression,* with a significance level of $\alpha \leq 0.05$.

Results

Table 3. Frequency Distribution of Characteristics of Respondents by Age in Work Area UPT Baolan Community Health Center Baolan District Tolitoli District, study time 10-14 September 2018

No	Age	Frequency	Percentage
1	<1 year	4	4.5
2	1-3 years	39	43,8
3	3-5 years	46	51.7
	Total	**89**	**100**

The results of the study showed that more than the majority of respondents aged 3-5 years were 46 respondents (51.7%).

1. Characteristics of Respondents by Education

Table 4. Distribution of Frequency Characteristics of Respondents by Education in Work Areas UPT Baolan Puskesmas Baolan District Tolitoli District, study time 10-14 September 2018

No	Education	Frequency	Percentage
1	SD	37	41.6
2 Middle	School	10	11.2
3	High School	20	22.5
4	PT	22	24.7
	Total	**89**	**100**

The results of the study showed that the majority of respondents had low education namely elementary education as many as 37 respondents (41.6%).

2. Characteristics of Respondents by Education

Table 5. Distribution of Frequency Characteristics of Respondents based on Employment in Work Areas UPT Baolan Community Health Center Baolan District Tolitoli District, study time 10-14 September 2018

No	Occupation	Frequency	Percentage
1	URT	45	50.6
2	PNS	12	13.5
3	Farmers	6	6.7
4	Private	4	4.5
5	Fishermen	9	10.1
6	Labor	1	1.1
7	Honorary	8	9.0
8	Plumbers	3	3.4
9	guard	1	1.1
	Total	**89**	**100**

The results showed that most respondents work as URT as many as 45 respondents (50.6%).

C. Characteristics of Variable

results obtained distribution data research variables are:

Table 1. Frequency Distribution of Respondents by Genesis ISPA Working Area Repeats at UPT Puskesmas Subdistrict Baolan Baolan Tolitoli, study time 10 to 14 September 2018

No	Recurring EventARI	Frequency	Percentage
1	ARI	79	88.8
2	No ISPA	10	11.2
	Total	**89**	**100**

The results of the study showed that almost all respondents had a recurrent ARI incidence of 79 respondents (88.8%).

Table 2. Frequency Distribution of Respondents based on Ventilation of houses in the Work Area of UPT Baolan Community Health Center, Baolan District, Tolitoli District, research time 10-14 September 2018

No	Ventilation House	Frequency	Percentage
1	Not eligible	60	67.4
2	Fulfilling the requirements	29	32.6
	Total	**89**	**100**

The results of the study showed that the majority of respondents who had home ventilation did not meet the requirements as many as 60 respondents (67.4%).

Table 3. Frequency Distribution of Respondents based on Occupancy Density in Work Areas of UPT Baolan Community Health Center, Baolan District, Tolitoli District, study time 10-14 September 2018

No	Occupancy Density	Frequency	Percentage
1	Not eligible	60	67.4
2	Fulfill the requirements	29	32.6
	Total	**89**	**100**

The results showed that most of the respondents had occupancy density that did not meet the requirements as many as 60 respondents (67.4%).

Table 4. Frequency Distribution of Respondents based on Medicinal Use of Mosquitoes in Work Areas of UPT Baolan Community Health Center, Baolan District, Tolitoli District, study time 10-14 September 2018

No	Use of Mosquito Medication	Frequency	Percentage
1	Using	51	57.3
2	Not using	38	42.7
	Total	**89**	**100**

The results of the study showed that most respondents had used mosquito repellent drugs as many as 51 respondents (67.4%).

Table 5. Frequency Distribution of Respondents based on Types of Cooking Fuel in the Work Area of UPT Baolan Community Health Center, Baolan District, Tolitoli District, research time 10-14 September 2018

No	Type of Fuel Cooking	Frequency	Percentage
1	Firewood	39	43.8
2	Gas	50	56.2
	Total	**89**	**100**

research found that half of respondents have a type Fuel Gas cooking is as much as 50 respondents (56.2%).

Table 6. Frequency Distribution of Respondents based on the Habits of Family Members Smoking in the Work Area of the Uolan Baolan Community Health Center, Baolan District, Tolitoli District, research time 10-14 September 2018

No	Habits of Family Members Smoking	Frequency	Percentage
1	Yes	73	82.0
2	None	16	18.0
	Total	**89**	**100**

the results showed that nearly all respondents have family members who smoke as much as 73 respondents (82%).

Table 7. Statistical Test Results

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2,168	,345	36,817	1	,000	,135

			Score	df	Sig.
Step 0	Variables	Ventilasi	3,954	1	,032
		Kepadatan_hunian	3,965	1	,032
		Obat_nyamuk	5,448	1	,013
		Bahan_Bakar_Memasak	2,645	1	,095
		Merokok	7,735	1	,003
	Overall Statistics		10,532	5	,034

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	10,655	5	,000
	Block	10,655	5	,000
	Model	10,655	5	,000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	51,898[a]	,613	,724

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001.

Classification Table[a]

	Observed	Predicted

			Kejadian ISPA Berulang		Percentage Correct
			ISPA	Tidak ISPA	
Step 1	Kejadian ISPA Berulang	ISPA	79	0	100,0
		Tidak ISPA	10	0	,0
	Overall Percentage				88,8
a. The cut value is ,500					

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Ventilasi	-,143	3,842	,001	1	,007	,867
	Kepadatan_hunian	-,143	3,842	,001	1	,009	,867
	Obat_nyamuk	1,672	,948	3,112	1	,038	5,323
	Bahan_Bakar_Memasak	,621	1,103	,317	1	,073	1,861
	Merokok	1,331	,898	2,197	1	,038	3,786
	Constant	-7,110	2,116	11,290	1	,001	,001
a. Variable(s) entered on step 1: Ventilasi, Kepadatan_hunian, Obat_nyamuk, Bahan_Bakar_Memasak, Merokok.							

Variabel	**OR**	**P value**
Ventilasi	0,867	0,007
Kepadatan_hunian	0,867	0,009
Obat_nyamuk	5,323	0,038
Bahan_Bakar_Memasak	1,861	0,073
Merokok	3,786	0,038
Variabel Dependen	Kejadian ISPA Berulang	

statistical test on this new study usedregression, *logistic*it was found that p <a value α = 0.05, it is seen the *Overall Statistics* with a significance value of (p) of 0.001, which means that there is the influence of environmental factors on the incidence of ARI repeated in children under five in the region of UPT Puskesmas Baolan, and disaggregation value (p) for each independent variable that is variable ventilation value (p) of 0.007, occupancy density variable has a value (p) of 0.009, variable use of insect repellent has a value (p) of 0.038, cooking fuel type variable has a value (p) of 0.073, variable habits of smoking family members have value (p) of 0.038. Which means the factor of ventilation, occupancy density, use of insect repellent, and habits of family members of smoking influence the incidence of recurrent ARI in children under five years of age in the work area of the Baolan Health Center in Baolan, Tolitoli district. While seen from the use of fuel which has a value (p) of 0.073 does not affect the recurring incidence of ISPA in children under five in the work area of the UPT Baolan Community Health Center, Tolitoli Regency.

Discussion

The results of the statistical analysis with the Logistic Regression test for the relationship between the use of mosquito coils and the incidence of ARI in infants found that the value of p (0.073) was greater than the value of α (0.05), thus there was no significant influence between the use of cooking fuel types by using firewood with ARI events. The results of this study are in line with the results of a study conducted by Sinaga (2012), who said that there was no effect on the use of fuel types on Ispa risk in infants. Where toddlers were exposed to recurrent Ispa events using fuel types with firewood as many as 37 respondents (41.6%) and those who used other than firewood as many as 42 respondents (47.2%), while respondents who were not exposed to Ispa with the use of this type of material burning with firewood as much as 2 respondents (2.2%) and using fuel types other than firewood as many as 8 respondents (9.0%).

Cooking fuels that use fuel wood and tanh oil can pollute the air because the effects can have an impact on human health. Pollutant substances produced from the use of firewood and kerosene as cooking fuels are particulates, sulfur oxides, nitrogen oxides, carbon monoxide, fluoride, aldehydes and

hydrocarbon compounds (Kusnoputranto, 2000).

this research is not in line with the research conducted by Halim (2012) which states that there is a relationship between cooking fuel and Ispa risk. The use of firewood as cooking fuel can cause air pollution and respiratory disorders. But in this study, there was no effect on the use of cooking fuel types because people who use firewood a little so that it does not represent the cause of ispa and most people have used the type of gas fuel in cooking activities, besides toddlers do not participate when mothers cook at the kitchen so that it is not exposed to air pollution due to cooking fuel.

Although this study has no effect on the use of cooking fuel types in recurring Ispa events, it must be kept in mind about the negative impact of using firewood as cooking fuel. In general, people in the UPT Puskesmas Baolan area use gas as cooking fuel, but there are some people who use firewood. In people who use fuel wood as fuel, counseling is needed about the negative impacts of firewood, especially if house ventilation is inadequate.

The results of the statistical analysis with the Logistic Regression test for the influence of smoking habits on the incidence of ARI in toddlers obtained p value (0.038) smaller than the value of α (0.05), thus there is a significant influence between the habits of family members smoking with ARI events. The results of this study are in line with the results of a study conducted by Gertrudis (2010), who said that there was an influence of smoking habits of family members with recurrent Ispa events in infants. Where toddlers who are exposed to recurrent Ispa events whose habits are smoking family members as many as 68 respondents (76.4%) and those who do not smoke as many as 11 respondents (12.4%), while respondents who are not exposed to Ispa with the habit of family members smoke as much as 5 respondents (5.6%) and no smoking as many as 5 respondents (5.6%).

Cigarette smoke contains CO with concentrations of more than 20,000 ppm while being smoked. The concentration is diluted to 400-500 ppm. The high CO concentration in smoked cigarette smoke results in increased COHb levels in the blood. Besides being harmful to people who smoke, the presence of cigarette smoke containing CO is also dangerous for people who are around it because the smoke can be sucked (Srikandi Fardiaz, 1992: 101).

Smoking is a cause of air pollution in the home and if in one house has a family member who smokes it will increase the risk of respiratory problems and one of the effects of smoke produced from cigarettes is the occurrence of Ispa risk.

Ispa is very wide-ranging in attacking toddlers because their immune system is still weak. Toddlers as passive smokers, where passive smokers get more dangerous risks. If toddlers breathe air that comes from cigarette smoke, it will cause irritation to the respiratory tract, if it is irritated it will easily become infected. The greater number of cigarettes consumed by smokers spent in the house most likely toddlers are exposed to more cigarette smoke causing respiratory problems in infants so that homes whose residents have smoking habits in the home have the opportunity to increase the incidence of Ispa in infants 7.83 times compared to toddlers who are residents no smoking in the house.

Logistic regression calculation results that house ventilation, occupancy density, use of mosquito coils, use of cooking fuel types and smoking power were significantly associated with recurring Ispa occurrence of 0.001 ($p < 0.05$). The results of this study indicate that the risk factors for the incidence of recurrent Ispa are not single, meaning that one risk factor with other risk factors is interrelated in influencing the incidence of Ispa in children under five in the work area of the Uolan Community Health Center.

The physical environment of homes that do not meet the requirements is a risk factor for pneumonia in infants. Therefore, efforts to prevent pneumonia need to pay attention to the physical environment of the house. According to WHO a healthy home is a physical structure that people or humans use for shelter, where the environment of the structure includes facilities and services needed, equipment that is useful for physical and spiritual health and social conditions that

are good for families and individuals. To realize a home with the above functions, the house does not have to be luxurious / big but a simple house can be formed into a decent house.

Conclusion

1. The results of the study showed that the majority of respondents had adequate ventilation as much as 60 respondents (67.4%), had a residential density that did not meet the requirements as many as 60 respondents (67.4%), had used mosquito repellent as many as 51 respondents (67.4%), having the type of cooking fuel is Gas as many as 50 respondents (56.2%), having family members who smoke as many as 73 respondents (82%).
2. The results showed that almost all respondents had a recurrent ARI incidence of 79 respondents (88.8%).
3. The results of statistical tests showed that p <a with a value of <0.05, this is seen in *Overall Statistics* with a significance value of (p) 0.001 which means that there are variables that affect the incidence of recurrent ARI, and when viewed (p) in each each independent variable namely the ventilation variable has a value (p) of 0.007, the occupancy density variable has a value (p) of 0.009, the mosquito repellent use variable has a value (p) of 0.038, the cooking fuel type variable has a value (p) of 0.073 , the variable habit of smoking family members has a value (p) of 0.038. Which means the factor of ventilation, occupancy density, use of insect repellent, type of cooking fuel, habits of family members of smoking influence the incidence of recurrent ARI in children under five years of age in the working area of the Baolan Health Center in Baolan, Tolitoli district.

References

Arikunto, 2014. *Prosedur Penelitian Suatu Pendekatan praktik*. Jakarta : Rineka Cipta.

Depkes RI. 2007. *Profil Kesehatan Indonesia*. Jakarta: Departemen Kesehatan RI.

Depkes RI. 2015. *Bank Data. Direktorat Jendral P2P* Depkes. RI. Jakarta

Depkes, RI 2011. *Profil Kesehatan Indonesia 2011*. Jakarta : Kementrian Kesehatan Republik Indonesia.

Depkes, RI. 2013. *Riset Kesehatan Dasar. Badan Penelitian dan Pengembangan Kesehatan* Departement Kesehatan RI.

Dinkes Kab. Tolitoli, 2017. *Data Ispa Bidang P2P Dinas Kesehatan Kab. Buol.*

Irma, Dkk. 2015., Jurnal *Hubungan Lingkungan Fisik dan Tindakan Penduduk dengan Kejadian ISPA pada Balita di Wilayah Kerja Puskesmas Lubuk Buaya.*

Lilis Afrikayanti dkk, 2012. *Hubungan Pengetahuan Ibu tentang imunisasi dasar dengan kelengfkapan imunisasi dasar pada bayi usia 1 tahun di puskesmas Depok 1 Sleman Yogyakarta.*

Lubis, imran. 2008. *Pengaruh faktor lingkungan terhadap penyakit infeksi pernapasan akut (Ispa).*

Maryunan A, 2012. *Ilmu Kesehatan Anak Dalam Kebidanan*. Jakarta : Trans Info Media.

Notoatmodjo, 2010. *Metodologi Untuk Ilmu Kesehatan*. Jakarta : Rineka Cipta.

Nursalam, 2014. *Konsep dan penerapan metodologi penelitian ilmu keperawatan*. Jakarta: salemba Medika.

Nursalam, 2015. *Konsep dan Penerapan Metodologi Penelitian Ilmu Keperawatan*. Jakarta : Salemba Medika.

Nursalam, 2017. *Metodologi penelitian ilmu kepera watan*. Edisi 4. Jakarta : Salemba Medika.

Nursalam.2008. *Konsep & penerapan Merodologo Penelitian Ilmu Keperawatan : Pedoman Skripsi, Tesis, dan Instrument Penelitian Keperawatan*. Jakarta : Salemba Medika.

Putra, 2012. Buku Ajar Ilmu Kesehatan Anak Infeksi dan Penyakit tropis edisi pertama. Jakarta : IDAI.

Rasmaliah. 2008 . *Infeksi Saluran Pernapasan Akut (Ispa) dan penanggulangannya.*

Sugiyono (2005). *Metode Penelitian*

Administrasi. Bandung : Alfabeta

Triska S.N dan Lilis S, 2005. *Hubungan Sanitasi Rumah dengan Kejadian ISPA Jurnal Kesehatan Lingkungan*, Vol. 2, No.1.50 Juli 2005 : 43-52.

UPTD Puskesmas Karamat, 2017. *Data Penderita Ispa Penanggung Jawab Program Ispa UPT Puskesmas Baolan. Kab. Tolitoli*.

World Health Organization, 2013. *http://pustakamateri.web.id/konsep-penyuluhan-kesehatan-untuk-masyarakat/. Com*